

Delta Vision

Context Memorandum: Learning from Others Governance and Finance Lessons from Three Complex Ecosystem Restoration Programs

This context memorandum provides critical information about lessons from three complex ecosystem restoration programs about governance and finance to support policy making. As they are developed, the context memos will create a common understanding and language about the critical factors in establishing a Delta Vision.

This is an iterative process and this document represents the beginning of a dialogue with you about how best to understand these lessons and to inform recommendations by the Delta Vision Blue Ribbon Task Force. You have two weeks to submit comments that may be incorporated into the next iteration.

You may submit your comments in two ways: either online at dv_context@calwater.ca.gov or by mail. If you are using mail, please send your comments to: Delta Vision Context Memo: Learning from Others, 650 Capitol Mall, 5th Floor, Sacramento, CA 95814.

Your attributed comment will be posted on the Delta Vision web site (<http://www.deltavision.ca.gov>). Please cite page and line number with specific comments; general comments may be keyed to sections.

Your participation in this iterative process is valuable and important and is greatly appreciated. Thank you for your comments.

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Iteration 1: July 9, 2007

1 *Section 1. Introduction*

2
3 The governance and finance aspects of the Sacramento-San Joaquin Delta
4 restoration efforts are as complex as the ecosystem they reflect. The purpose of this
5 analysis is to understand governance and finance approaches used by other states as
6 they manage similarly complex ecosystems and the ever-present forces that affect their
7 progress toward ecosystem restoration.

8
9 Three large and complex ecosystem management programs have been selected for
10 review. The objective of this review is to better understand the problems that led to their
11 establishment, the governance and finance systems used to implement their restoration
12 programs and the forces that affect their restoration efforts. The three programs chosen
13 for analysis are the Columbia River Basin Program, the Florida Everglades Restoration
14 Program and the Chesapeake Bay Program. In each case, analysis includes the setting
15 and history of the program; the governance structure; and, the financing methods for
16 programs and projects. The Chesapeake Bay and Columbia River programs are multi-
17 state projects and therefore will have a different dynamic than single state experiences
18 such the Florida Everglades project.

19
20 The “lessons learned” from this analysis are seen through the lens of answers to the
21 following questions:

22 23 **Governance**

- 24 ➤ Does the agency have the ability to directly implement its decisions?
- 25 ➤ Are all of the agencies with powers and duties affecting the ecosystem
- 26 problem involved in the decision-making process?
- 27 ➤ Does the body have the ability to affect the activities of the constituent
- 28 agencies?
- 29 ➤ Is the decision-making process open and transparent?
- 30 ➤ Do scientific and public voices have a forum?
- 31 ➤ Have all of the agencies with operating responsibilities adopted the plan set
- 32 out by the program?

33 34 **Finance**

- 35 ➤ Is there a reliable system for financing restoration programs?
- 36 ➤ Are the financial obligations shared among the affected agencies?
- 37

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Summary of Findings

Four conclusions can be draw from a review of the governance, finance and activities of the three complex ecosystem restoration programs.

1. ***There is no substitute for the independent authority to act.*** In the three programs reviewed in this analysis, the restoration programs rely on the goodwill of other entities to implement restoration projects. Without independent authority to finance and carryout programs, the role of the agency is to coordinate the work of others toward a policy goal. Although the federal government plays a major role in all three programs, the uncertainty of federal commitments can affect progress toward restoration goals. Additionally, in each of the three programs, a multitude of federal, state, local and other interests are involved. The more players, the more difficult it is to gather consensus on a short or long-term vision on restoration.
2. ***The more independent the players, the more fragmentation and less accountability.*** The organizations that are set up through multi-state agreements are generally set up to act as an open forum for the stakeholders. Decisions on specific projects are usually brought to the body formed by the agreement for their approval or endorsement. In the end, accountability suffers when activities to be performed are undertaken by an agency other than the agency created by the agreement. The task of monitoring progress is particularly important in this circumstance. In these cases, the agreement always relies on the financial ability and the goodwill of others.
3. ***The agency that raises the revenue should spend the money.*** Most restoration projects are funded by the federal government and the participating state governments, since the organization in charge of the restoration effort usually does not have independent financing capacity. Only one program reviewed in this analysis, the Columbia River Basin project, has a dedicated funding mechanism.
4. ***Without a vision you do not know where you are going.*** Each of the three programs analyzed employs a different planning process. Of the three programs analyzed, the Chesapeake Bay project has the most elaborate planning process. The Columbia River project is basically a list of five-year project plans with local agencies competing for a pot of money generated by the Bonneville Power Administration. The Florida Everglades project has a restoration plan that is federally recognized and includes specific goals that guide specific projects.

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Acknowledgments

Most of the information contained in this paper comes from a variety of sources. The primary source was the Northeast Midwest Institute. Based in Washington D. C., the institute is a non-partisan, non-profit organization “dedicated to economic vitality, environmental quality, and regional equity for the Northeast and Midwest states.” It conducts research and analysis on large-scale ecosystem restoration initiatives including the ones reviewed in this paper. More information on the institute’s research can be found at www.nemw.org.

Web sites of the organizations included in this analysis provided a great deal of information.

- ✓ For the Northwest Power and Conservation Council for the Columbia River Basin see www.nwcouncil.org.
- ✓ For the Everglades Restoration program see www.evergladesplan.org.
- ✓ For the Chesapeake Bay Program see www.chesapeakebay.net. For a detailed description of governance for the Chesapeake Bay program see “A Who’s Who in the Chesapeake Bay Program,” November 2003. www.chesapeakebay.net.

For more material see the Sources and Notes section.

Section 2. Experiences of Three Large-Scale Environmental Restoration Programs

The three large-scale environmental restoration projects selected for this analysis have many similarities. Each arose out of old, in some cases century old, sets of problems brought on by actions of earlier federal and state policies and the effects of urbanization. The recognition of environmental problems and the establishment of restoration programs often took years to develop. In the case of the Columbia River Basin, the decision by the federal government to install hydroelectric and irrigation facilities early in the 20th century led to the decline of fish habitat. The restoration program began in the 1970s with the recognition that salmon habitat had been affected by these facilities and water diversion. In central Florida, public policies in the 19th century to “drain the swamp” set a course of major disruption of the ecosystem over a long period of time. Restoration efforts began in the early 1970s with the recognition in the statehouse that water policies needed to change. The Chesapeake Bay situation arose from development patterns and the economic use of natural resources over several centuries that led to serious pollution problems. In this case, a non-profit

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1 organization formed in 1967, the Chesapeake Bay Foundation, increased public
2 awareness of the environmental decline of the Chesapeake Bay and brought about a
3 change in public policy.

4
5 The governance and finance aspects of ecosystem restoration tend to reflect the
6 territory covered by the problem. In the case of the Columbia River Basin, the primary
7 cause of the habitat loss comes from hydroelectric facilities on the Columbia and Snake
8 Rivers. There are four primary states (Washington, Oregon, Idaho and Wyoming)
9 involved in organizing a multi-state compact to deal with the issue. This effort is
10 financed in part by a surcharge on the wholesale price of electricity charged by the
11 Bonneville Power Administration. The Chesapeake Bay Program also involves a multi-
12 state compact that includes three states (Maryland, Virginia, and Pennsylvania). It is
13 financed through state and federal funds. The central Florida Everglades region is
14 wholly within the state of Florida and is the best example of an attempt by a single state
15 to handle a major environmental restoration program.

16 17 **The Columbia River Basin¹**

18 **The Setting.** The Columbia River Basin covers a 259,000-square-mile area and
19 includes territory in seven states – Oregon, Washington, Idaho, Montana, Nevada,
20 Wyoming, and Utah – and the Canadian Province of British Columbia. The ecology of
21 the Columbia River Basin is diverse, ranging from forested areas to the north, to semi-
22 arid areas to the south and east.

23 Alteration of the Columbia River Basin ecosystem has been an ongoing issue for
24 over 150 years, beginning with settlements in the late 19th century and declining fishery
25 harvests in the 1890s. The Reclamation Act of 1902, which gave the federal government
26 the authority to provide irrigation to farmers in the west, brought with it engineering
27 projects to accomplish the task, including the construction of major dams and
28 hydroelectric facilities including the Rock Island, Bonneville and Grand Coulee.
29 Electricity generation is an important industry for the Columbia River Basin – it is the
30 world's most hydroelectrically-developed river system.

31 In addition to the impacts of the hydroelectric facilities, the Columbia River basin is
32 home to more than 11 million residents, including historically significant populations of
33 Native Americans.

34 The Columbia River Basin also plays a role in world trade. The Columbia and
35 Snake Rivers carry 17 million tons of cargo annually to and from the Pacific Ocean along
36 a 465-mile waterway. Because of the 40-foot-deep channel in the lower river and slack

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1 water lakes on the middle river, ocean freighters can navigate up the Columbia and
2 Willamette rivers to Portland and barges can transport goods to the interior.

3 **The Problem.** The primary problems facing the Columbia River Basin can be traced
4 to hydroelectric facilities and the redirection of water from the river system for agricultural
5 purposes. By the late 1930s the river was no longer an unimpeded drain of a 256,000-
6 square-mile watershed. The flow of the river is interrupted by over 400 dams, 11 run-of-
7 the-river dams on the mainstream, and hundreds of major and modest flow-altering
8 structures on its tributaries. Combined with over-harvesting, habitat destruction,
9 changing river conditions, and pollution, these hydroelectric modifications have
10 significantly affected wild salmon populations.

11 According to the Northeast Midwest Institute major habitat problems identified
12 include²:

- 13 • More than 90 percent decline in wild salmon populations.
- 14 • A dozen major salmon and steelhead runs listed as endangered and several
15 species extinct.
- 16 • 55 percent loss of salmon and steelhead habitat.
- 17 • 31 percent loss of stream miles, preventing the annual migration and spawning of
18 salmon.
- 19 • Several species of birds listed as threatened or endangered, including the bald
20 eagle, northern spotted owl, marbled murrelet, brown pelican, and American
21 peregrine falcon.
- 22 • Declining mammal populations, including the Columbia white-tailed deer which is
23 on the endangered species list.

24
25 **The Response.** Early restoration efforts consisted of fish ladders at the dams.
26 Early responses highlighted the conflicts between power generation, water availability for
27 agriculture and habitat restoration. Efforts to restore salmon runs from the 1970s
28 through the 1990s were largely unsuccessful. According to the Northeast Midwest
29 Institute, salmon runs in the Columbia River Basin continued to decline. By 1995,
30 salmon populations were estimated at 500,000 of all species, including wild and
31 hatchery – approximately 2 to 5 percent of the original run size.

32
33 While state and federal public policy in the Columbia River Basin historically focused
34 on the creation of economic benefits through hydroelectric power and flood control, the
35 focus has shifted since the 1970s to finding a balance between energy and agricultural
36 needs and ecosystem management and restoration.

37

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Governance, Powers and Duties and Restoration Activities. The institutional response has been typical of solutions to environmental problems that affect the powers and duties of a large number of governmental agencies: establish a multi-agency organization with limited powers that include planning and coordination functions, but do not affect the underlying power of the existing federal, state, tribal or local governments involved.

The agency created to carry out the planning and coordinating function and to oversee restoration activities is the Northwest Electric Power and Conservation Planning Council.³ The Council was created by the U. S. Congress in 1980 under the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), as an interstate compact agency that includes Idaho, Montana, Oregon and Washington. The underlying purpose of the act was to provide a stronger voice to the states in determining the future of key resources common to all four states – namely, the electricity generated at by the Columbia River Basin hydropower dams and the fish and wildlife affected by the dams. The governor of each state appoints two members to serve on the Council. The legislation creating the Council contains three principal mandates:

- Develop a regional power plan to assure adequate and reliable power at the lowest economic and environmental cost in the Northwest.
- Develop a fish and wildlife program to protect, mitigate and enhance populations affected by hydropower development in the Columbia River Basin and make funding recommendations to the Bonneville Power Administration for projects to implement the program.
- Conduct a program to educate and involve the public in the decision-making processes.

The Council manages three program areas: power operation, including forecasts of power generation needs; the fish and wildlife program, including the planning and review of restoration proposals; and, the public outreach program.

The plans and policies the Council develops and approves are implemented by numerous federal agencies including the Bonneville Power Administration (BPA), the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, and the Federal Energy Regulatory Commission.

The central restoration policy planning tool is the Columbia River Basin Fish and Wildlife Program. The Council, through a public outreach and communications program, gathers recommendations from federal and state fish and wildlife agencies, Indian tribes,

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1 and others concerning the needs of fish and wildlife in the basin. Following a solicitation
2 process, the Council selects projects and forwards them to the BPA. In developing the
3 program, the Council's most difficult task is to balance the needs of fish and wildlife with
4 regional hydropower needs. The Council's Independent Scientific Review Panel (ISRP)
5 assesses proposed projects to ensure that they are consistent with the goals of the fish
6 and wildlife program. Once the public process is complete, the Council issues the fish
7 and wildlife program, which provides guidance and recommendations on mitigating the
8 impacts of hydropower on fish and wildlife. The power plan and fish and wildlife program
9 are updated at least every five years.⁴

10
11 The Northwest Power Act directs the BPA to fund the protection, mitigation, and
12 enhancement of fish and wildlife in the basin. To meet this requirement, BPA enters into
13 agreements with other entities to achieve the goals and objectives outlined by the
14 Council. Bonneville is assisted by the Columbia Basin Fish and Wildlife Authority,
15 composed of federal, state, and tribal fish and wildlife officials, which provides
16 recommendations regarding fish and wildlife projects proposed by contractors.

17
18 **Restoration Projects and Activities.** The project review process for the 2007-09
19 fiscal years provides an example of how the project selection works. Proposals for
20 projects to implement the program in Fiscal Years 2007-2009 were submitted to the
21 Council and the BPA in early 2006. Beginning in 2007, projects that implement the fish
22 and wildlife program were recommended to BPA for funding over a three year period.
23 Building on the local input in sub-basin plans adopted by the Council in 2005, the
24 Council sought comments and advice from local groups throughout the Columbia Basin
25 on which project proposals addressed the highest priorities in sub-basin plans and
26 should be funded.

27
28 The Independent Scientific Review Panel (ISRP) assessed 540 proposals and
29 submitted its initial review of projects to the Council. At the same time as the ISRP
30 review, a separate project review was conducted at the sub-basin level and coordinated
31 through the Council's state offices. Participants in this review included state and tribal
32 fish and wildlife managers and other federal, local and non-profit organizations. The
33 Council made its project-funding recommendations to the Bonneville Power
34 Administration.

35
36 Given the conflict between power generation and habitat restoration the choices for
37 projects tend to be on the margins of habitat improvement although there may be cases
38 where small projects make a major difference. This analysis does not attempt to point
39 out the effectiveness of these projects but rather to show the nature of the choices that
40 the Council and the Bonneville Power Administration have to make.

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Finance⁵. The Columbia River Basin Program is financed through a surcharge levied by BPA on the wholesale price of electricity generated by BPA facilities. The revenue generated by the surcharge is allocated for two purposes. First, about half of the revenue is used to offset costs that are attributable to restoration, including power purchases and foregone revenue due to operating restrictions. From 1978 to 2005 this amounted to about \$4 billion. Second, revenue for the direct expenditure for the Fish and Wildlife Program during this same period was approximately \$3.8 billion for a total revenue allocation of \$7.8 billion over the 27 year period.

The Council is funded by the member states and by the energy surcharge levied by the Bonneville Power Administration. Although the Council has raised issues over the amount of the surcharge and has suggested increasing the rate, the surcharge provides a continuous stream of revenue that supports the activities of the Council and direct restoration projects. The Council's budgets over the last 10 years have averaged approximately \$8.5 million dollars.

Council Planning Program Expenditures – 2007

Power Planning	\$2,645,000
Fish and Wildlife Program	\$2,400,00
Public Affairs	\$1,325,000
State Council Participation	\$2,715,000
<i>Total FY 2007 Expenditures</i>	<i>\$9,085,000</i>

The Council's Fish and Wildlife Program for salmon restoration efforts have spent approximately \$1.02 billion over the last 20 years on federal salmon restoration efforts through this program. No annual congressional appropriation is required for this program.

Additional funds are spent by the Army Corps of Engineers, the Bureau of Reclamation, and National Marine Fisheries Service. These funds are annual appropriations and not stable, resulting in uneven implementation. Roughly \$125 million per year for the Interior Columbia Basin Ecosystem Management Project is appropriated from Congress. The Lower Columbia River Estuary Partnership receives \$300,000 per year under the Clean Water Act.

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1 Charged with bringing new order to Columbia River management, the Council has
2 generally drawn praise for its efforts at promoting energy conservation but has had a more
3 difficult time gaining consensus on saving salmon. — William Dietrich, *Northwest Passage:*
4 *The Great Columbia River*, 1995, page 290.⁶

5

6 **Strengths and Weaknesses.** Facing over a century of development of
7 hydroelectric and irrigation projects, the Northwest Electric Power and Conservation
8 Planning Council has the unenviable task of orchestrating a policy shift from economic
9 development to environmental restoration with the knowledge that for the most part,
10 hydroelectric facilities are likely to remain in the basin. The Council's primary avenue of
11 restoration has been through mitigation projects in the hopes that they will restore
12 habitat and slow the degradation. Salmon have been at the center of this important shift
13 in public policy philosophy, but a variety of obstacles have stood in the way of effective
14 restoration.

15

16 The primary strength of the program is that it maintains a funding stream for specific
17 restoration projects of approximately \$150 million per year from the Bonneville Power
18 Administration. Although it has been criticized for its lack of a cohesive vision, having an
19 independent financing scheme brings a constant flow of capital into the ecosystem
20 restoration process. A clear allocation of responsibility remains an issue. With the
21 number of states involved – each with its own environmental regulatory programs – the
22 overall effort has been the subject of criticism since there is limited accountability.

23

24 The following is an observation made by the Northeast Midwest Institute.

25 Although the Columbia River system is similar to other ecosystems across the
26 United States in that it encompasses numerous states, two countries, various
27 tribal and local entities, and industry authorities, restoration efforts in the basin
28 should not be considered as a model. The lack of a single, comprehensive
29 restoration plan is a definite obstacle for restoring the Columbia River system.
30 To the detriment of restoration efforts in the region, the four primary restoration
31 programs currently operating in the basin function independently of each other,
32 and in some cases have historically been at loggerheads.

33 Together, the four primary restoration programs have resulted in multiple
34 restoration goals and objectives, numerous court actions and appeals, significant
35 delays in restoration actions, uncertain timelines, and continuous implementation
36 problems and issues. Perhaps the two most important factors impeding
37 restoration efforts in the Columbia River are the apparent lack of a lead federal

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1 agency charged with overseeing and implementing all federal restoration efforts,
2 and the lack of a holistic, system wide approach to restoration.

3 There is no specific, uniform set of restoration goals and objectives for the
4 Columbia River. Instead, there exist multiple restoration initiatives. The
5 numerous court actions and appeals resulting from conflicts between the Pacific
6 Northwest Electric Power and Conservation Planning Council, various federal
7 agencies, and others, also have significantly delayed the restoration processes
8 and resulted in unclear timelines and plan-implementation problems. However,
9 the restoration focus to date has been salmon and steelhead stock recovery,
10 habitat restoration, and fisheries management.

11 Some argue that one of the most significant obstacles to successful integrated
12 ecosystem management is institutional fragmentation. The Columbia River Basin is
13 under the jurisdiction of two countries, several states, more than a dozen tribes, and
14 numerous local agencies. Even among federal river managers there is a substantial
15 amount of institutional fragmentation. The chart below identifies the primary federal
16 agencies that have independent responsibilities in the basin.

17

Federal Agency Responsibility in the Columbia River Basin

Agency	Activity
National Marine Fisheries Service and the U.S. Fish and Wildlife Services	Implements the Endangered Species Act
Environmental Protection Agency	Enforces the Clean Water Act
U.S. Forest Service	Manages a large portion of land in the basin
Bureau of Indian Affairs	Ensures tribal rights are recognized

18

19 The Northwest Power and Conservation Council is built on a collaborative model
20 that helps plan power production, energy conservation, and fish and wildlife restoration
21 activities throughout the basin. Add in the dozens of *independent* federal and state
22 agencies, tribal agencies, and local agencies, and one gets a picture of the complexity of
23 the institutional landscape and the challenges river managers face in trying to restore the
24 region's fish and wildlife populations to healthy levels.

25

26 **Florida Everglades Restoration Program⁷**

27 **The Setting.** The South Florida ecosystem encompasses about 18,000 square
28 miles and is dominated by the watersheds of the Kissimmee River, Lake Okeechobee,
29 and the Everglades. The Everglades network of wetlands forms the most crucial

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1 component of the ecosystem. Fed by Lake Okeechobee, the Everglades once acted as
2 a natural filter oscillating with the seasons over millions of acres to support and provide
3 habitat for diverse wildlife to feed, shelter, and breed their young. This vast, free-flowing
4 river of grass extended from the Kissimmee chain of lakes to Florida Bay, sustaining
5 large populations of wading and migratory birds, crocodiles, panthers, manatees, deer,
6 and fish.

7
8 Over the last 150 years, the Everglades have been the source of significant conflict
9 over its preservation as a complex ecosystem and its use for economic development. In
10 the late 1800s there was a concerted effort on the part of private interests and the state
11 government, led by Governor William Bloxham to reclaim “swamp land” in order to
12 facilitate agricultural and residential development. The primary vision of the State of
13 Florida and the federal government as represented by the Swamp and Overflowed
14 Lands Act of 1850 was for the sale of land to generate revenue and promote
15 development. The act resulted in more than 20 million acres of land being granted to
16 Florida.

17
18 Throughout the rest of the 19th century, construction projects in South Florida were
19 implemented with the expressed purpose of facilitating agriculture and residential
20 development. Disputes between the development interests in Florida continued into the
21 20th century with the passage of the Rivers and Harbors Appropriation of 1899 and the
22 Rivers and Harbors Act of 1902 which established federal control over navigable
23 waterways. Marine commerce began to develop as the Army Corp of Engineers
24 improved navigation in the Kissimmee River. In 1904, Napoleon Bonaparte Broward
25 was elected governor on the promise to create an “Empire of the Everglades” by
26 draining the area. Shortly thereafter, a Board of Drainage Commissioners was created
27 to oversee a system of canals, drains and levies in order to drain and reclaim the swamp
28 and to provide for irrigation of reclaimed lands.

29
30 Following 20 years of continued development abated only by erratic weather and
31 the boom and bust real estate economy, in 1947, the Army Corp of Engineers suggested
32 a comprehensive plan for flood control. The plan recommended major improvements
33 that would provide additional flood protection and in 1948, Congress approved the
34 request. From 1954 through 1970, Congress passed continuing project authorization
35 and funding for water development that would increase storage and conservation of
36 water and improve water distribution.

37
38 **The Problem.** Over 100 years of federal and state policy to “drain the swamp”
39 yielded a long list of problems. The Northeast Midwest Institute has identified key
40 problems, mostly inappropriate water management schemes, predominantly the Army

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1 Corps of Engineers' Central and South Florida Project. The project was built to address
2 flood protection and provide water for municipal and agricultural purposes, combined
3 with increased water demands and excessive drainage of wetlands. These have
4 significantly contributed to the highly degraded state of the South Florida ecosystem.

5
6 Today, Lake Okeechobee provides drinking water for over six million people (three
7 times more than originally intended) and serves as a source of irrigation for a \$1.5
8 billion-a-year agricultural industry. These use requirements have changed the natural
9 variability of water flow, water timing and water distribution, severely straining the ability
10 of the ecosystem to perform its intended function, particularly in the Everglades.

11 Major problems in the ecosystem include:⁸

- 12 • A 90-95 percent reduction in wading bird populations and continuing reductions
13 in the number of birds initiating breeding in the ecosystem.
- 14 • A total of 68 plant and animal species listed as threatened or endangered (more
15 than any other state in the U.S.).
- 16 • Approximately one million acres of land under health advisories for mercury
17 contamination.
- 18 • Over 1.5 million acres infested with invasive species and exotic plants.
- 19 • Declining populations of commercially and recreationally important fish species in
20 the St. Lucie and Caloosahatchee estuaries and Biscayne and Florida Bays.
- 21 • Defoliation of sea grasses, fish kills, and deformed fish in the St. Lucie estuary.
- 22 • Repetitive water shortages and saltwater intrusion.
- 23 • More than a 50 percent reduction in the size of the Everglades compared to 100
24 years ago.
- 25 • A 70 percent reduction in water flow through the ecosystem.
- 26 • Declining water quality through increased levels of polluted runoff, nutrients (e.g.,
27 phosphorus and nitrogen), and contaminants (e.g., metals and pesticides), and
28 soil erosion and subsidence.
- 29 • Untreated urban and agricultural storm water sent directly to natural areas and
30 estuaries that are critical nurseries and homes to many fish and wildlife.
- 31 • Lack of adequate water for urban and agricultural users – during the dry season,
32 the current water regime is unable to provide sufficient freshwater supplies for
33 the natural system, or for urban and agricultural consumers. Water shortages
34 and water restrictions are now a regular occurrence in some parts of South
35 Florida. Water conflicts may become more common and more severe without
36 changes to the water management system.

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Complicating this set of problems are the uses of the water resource. The South Florida region has grown to sustain over six million people, encompassing seven of the 10 fastest-growing metropolitan areas in the country. The economy is supported by growing industries including a \$16 billion tourism industry. Agriculture, the industry that dominated the 19th century reclamation efforts, encompasses over 400,000 acres of the Everglades Agricultural Area that is planted with sugar cane, 60,000 acres of sweet corn and 30,000 acres of rice. The sugar industry has been at the forefront of the restoration debate due to its environmental impacts. Environmentalists have argued that the federal sugar price-support program and state subsidies for irrigation and water management services have fueled the exponential growth of the sugar cane industry.

The Response. By the mid-1970s, Florida began a major shift in state policy, from 100 years of “draining the swamp” to a focus on restoration. The Legislature passed the Kissimmee River Restoration Act, mandating the development of restoration measures in the Kissimmee River region. The Central and Southern Florida Flood Control District was renamed the South Florida Water Management District, reflecting the changing scope of the district’s responsibilities. In the mid-1980s, Florida Governor Bob Graham launched the “Save Our Everglades” Program with an executive order calling for restoration of the Kissimmee River, Lake Okeechobee, and the Everglades. The program was the first attempt to address problems over the entire Everglades ecosystem, not just parts of it.

Since 1990 and following lengthy judicial proceedings, state and federal resources have been directed at restoration efforts. In 1993, the departments of Agriculture, Commerce, Interior, Justice, and Transportation, as well as the Army Corps of Engineers, signed a five-year agreement establishing an Interagency Federal Task Force. Led by the Department of Interior, the Task Force was given the responsibility of coordinating ongoing and future Everglades’ restoration efforts through consistent policies, plans, programs, and priorities.

In 1994 the Florida Legislature enacted the Everglades Forever Act, underwriting \$685 million for construction, land acquisition, and water treatment. The law gave the South Florida Water Management District the power to impose taxes on sugar farmers in order to pay for the cleanup of farm runoff. The sugar industry agreed to pay \$320 million over 20 years to support restoration efforts, with taxpayers expected to pay the remainder.

Governance, Powers and Duties and Restoration Activities. Currently, Everglades restoration activities are governed by a combination of state and federal

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1 organizations. In 1995, Governor Lawton Chiles established the Governor's
2 Commission for a Sustainable Florida by executive order. The Commission was
3 charged with developing recommendations and fostering public support for restoring the
4 South Florida ecosystem, while maintaining a sustainable economy and quality
5 communities. The South Florida Ecosystem Restoration Task Force (Task Force) was
6 established by the federal Water Resources Development Act (WRDA) of 1996. The
7 Task Force consists of 14 members from four sovereign entities. There are seven
8 federal, two tribal, and five state and local government representatives. The
9 Commission is a member of the Task Force.

10
11 The duties of the Task Force are to:

- 12 • Coordinate the development of consistent policies, strategies, plans, programs,
13 projects, activities, and priorities addressing the restoration, preservation, and
14 protection of the South Florida ecosystem.
- 15 • Exchange information regarding programs, projects and activities of the agencies
16 and entities on the Task Force to promote ecosystem restoration and
17 maintenance.
- 18 • Facilitate the resolution of interagency and intergovernmental conflicts
19 associated with the restoration of the South Florida ecosystem among the
20 agencies and entities on the Task Force.
- 21 • Coordinate scientific and other research associated with the restoration of the
22 South Florida ecosystem.
- 23 • Provide assistance and support to agencies and entities on the Task Force in
24 their restoration activities.

25
26 Between 1996 and 1998, subgroup and multi-agency, multidisciplinary teams
27 associated with the Task Force created, formulated and evaluated a vast array of past
28 and present restoration proposals, feasibility studies, and individual projects. The
29 primary objective was to determine the ideal components of a comprehensive restoration
30 plan. All modeling results and evaluations were posted on the Central & South Florida
31 Project Restudy Web site for the Task Force and general public to review and provide
32 input. The Governor's Commission for a Sustainable Florida synthesized and refined the
33 information. The result was an initial framework for organizing components and
34 developing a comprehensive plan for the Central & South Florida Project Restudy.

35
36 **Restoration Projects and Activities.** Political awareness in the 1990s through the
37 turn of the century brought increasing environmental activism toward increasing
38 restoration efforts. In 1996, major propositions were approved by the voters that

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1 required the sugar industry to fund 100 percent of the cost of pollution cleanup. In 1999
2 the Comprehensive Everglades Restoration Plan (CERP) was developed as the basic
3 policy instrument for Everglades' restoration. Congress formally approved CERP, as
4 defined by the "Final Integrated Feasibility Report and Programmatic Environmental
5 Impact Statement."

6
7 CERP endeavors to restore, protect, and preserve the South Florida ecosystem.
8 The overarching principles that guide the development and implementation of the plan
9 include:

- 10 • Meeting restoration, preservation, and protection requirements while providing for
11 other regional water-related needs.
- 12 • Incorporating best-available science and independent scientific review.
- 13 • Openly including and engaging stakeholders and ensuring full partnership with
14 federal, tribal, state and local agencies, including taking their views into full
15 consideration.
- 16 • Creating a flexible plan that is based on adaptive assessment and recognizing
17 that modifications will be made in the future based on new information.

18
19 CERP outlines structural and/or operational modifications that need to be made to
20 the original Central & South Florida Project in order to improve the quality of the
21 environment; protect water quality; improve protection of the aquifer; improve the
22 integrity, capability, and conservation of urban and agricultural water supplies; and,
23 improve other water-related purposes. The concept behind CERP is to capture and
24 store freshwater currently discharged to the ocean and use it during the dry season to
25 replicate natural flow (approximately 80 percent to be used for the natural system and 20
26 percent for agricultural and urban uses). This goal is to be achieved through the
27 removal of 240 miles of levees and canals, and by building a network of reservoirs,
28 underground storage wells, and pumping stations that capture water for redistribution.

29
30 In 1999, the first cost estimate for CERP restoration activities totaled \$7.8 billion
31 with a timeline through 2038. The annual operation and maintenance cost, including
32 adaptive assessment and monitoring, was estimated at \$182 million.

33
34 The Army Corps of Engineers and the South Florida Water Management District
35 share responsibilities for implementing CERP. While implementation of the plan is
36 expected to continue through 2038, the projected halfway point of CERP is 2010. The
37 purpose of the CERP is to act as a "conceptual framework" to guide the efforts of the
38 Army Corps of Engineers and its partners. The Army Corp of Engineers stated in

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1 congressional testimony that the plan will be implemented over the next 30 years and
2 will:

- 3
- 4 • Improve the health of over 2.4 million acres of the South Florida ecosystem,
5 including the Everglades National Park.
- 6 • Improve the health of Lake Okeechobee.
- 7 • Virtually eliminate damaging freshwater releases to the estuaries.
- 8 • Improve water deliveries to Florida and Biscayne Bays.
- 9 • Enhance water supply and maintain flood protection.
- 10 • Protect water quality.

11
12 Implementation of the CERP is being guided by a set of principles:

- 13
- 14 • Utilization of interdisciplinary and interagency teams.
- 15 • Incorporation of outreach and public involvement.
- 16 • Maintenance of regional system focus.
- 17 • Integration with ongoing and future projects.
- 18 • Integrated contingency planning.
- 19 • Consideration of water quality needs.
- 20 • Plan evaluation through adaptive assessment.
- 21 • Addressing of uncertainties.
- 22 • Assurances to water users.
- 23 • Development and refinement of models and tools.

24
25 An "Adaptive Assessment Program" has been established to evaluate how well the
26 phases of CERP achieve their expected objectives. These evaluations form the
27 foundation by which future phases of the plan can be refined. The Adaptive Assessment
28 Program forms an integral component of CERP and includes system-wide
29 comprehensive and integrated monitoring. The outcome from the monitoring will
30 ultimately be used to support CERP's goals and objectives. The monitoring program has
31 a dual focus on the biological and hydrological restoration objectives in the urban and
32 rural regions and includes hydrologic, water quality and physical process monitoring.

33
34 **Finance.** The State of Florida and the federal government share the financing of
35 restoration work. The bulk of federal participation is through the Army Corps of
36 Engineers. The state recently issued long term bonds to assist in the financing of
37 restoration projects. A five-year fiscal year period from 1998 through 2002 will give a
38 snapshot of the funding levels for restoration commitments by federal, state and local
39 agencies. Over half of the state funding was expended by the Florida Department of

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1 Environmental Protection, while the bulk of the federal commitment was expended by
2 the Army Corps of Engineers.

3
4

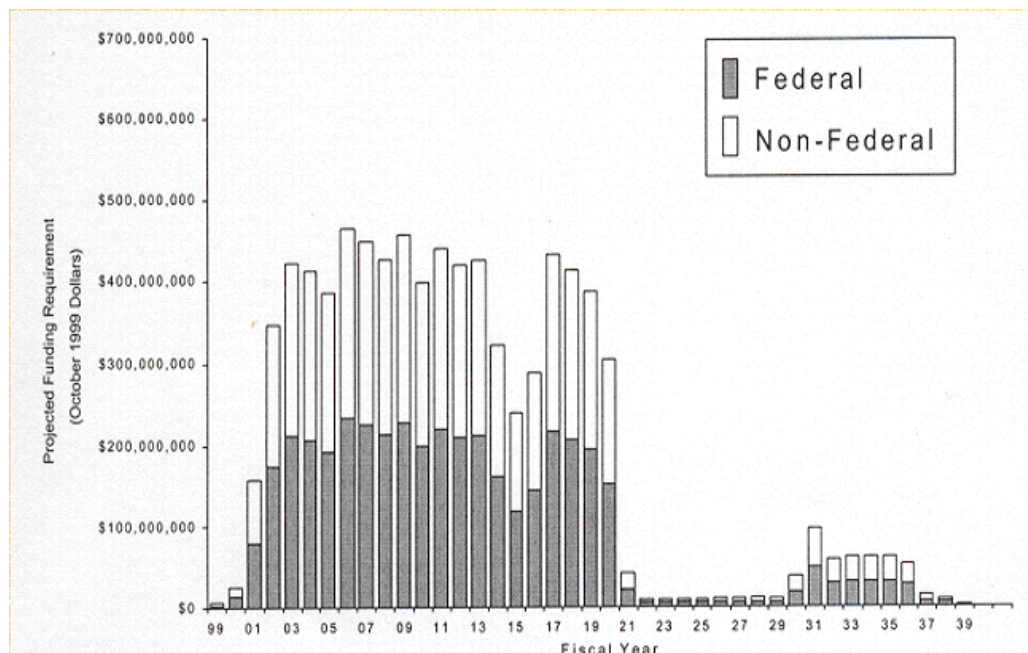
Federal State and Local funding for Florida Everglades Restoration 1998 through 2002⁹

Local (South Florida Water Management District)	\$1.7 billion
State	\$1 billion
Federal	\$3.4 billion

5

6 The Federal Water Resources Development Act of 2000 authorized \$4 billion to
7 Everglades restoration. In 2002, President George Bush and Florida Governor Jeb
8 Bush signed an agreement providing for Everglades restoration at a cost of \$7.8 billion
9 to be shared between the federal and state governments. The agreement also
10 committed the federal and state governments to using water made available from the
11 restoration plan for the restoration of the natural system. In the same year, the Florida
12 Legislature approved the use of bonding to generate needed revenue for land
13 acquisition related to the Everglades restoration program.

14



25 **Figure 1. Timeline and Estimated Funding Levels for CERP Implementation**

26 Comprehensive Everglades Restoration Plan (CERP) implementation projected Federal and non-Federal funding requirement and
27 timeline from 1999 to 2039. Courtesy CERP

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1 **Strengths and Weaknesses.** The primary weakness of the Everglades restoration
2 is the lack of an intergovernmental agency that would include all of the stakeholders and
3 would be tasked with the duty to oversee the restoration program. That duty is left to a
4 commission created by gubernatorial executive order, “task forces” created by the
5 federal government and the Army Corps of Engineers.

6
7 The Everglades restoration program relies exclusively on the goodwill of the federal
8 government, specifically the Army Corps of Engineers and the State of Florida which,
9 over the last 15 years, has made a commitment to the restoration of this ecosystem.

10
11 The U.S. Governmental Accounting Office (GAO) noted in a 1999 report that a
12 strategic plan and a process for resolving conflicts are needed. The report noted that
13 between 1993 and 2002, eight federal agencies and one state agency spent \$576 million
14 to conduct scientific research, monitoring and assessment in support of the restoration of
15 the South Florida ecosystem. The GAO concluded that the lack of coordination in these
16 efforts produced gaps in the information that, if not remedied, will hinder restoration
17 efforts.¹⁰

18
19 Possible issues of contention arising during CERP implementation include
20 stakeholder assurances for water allocation; agency and entity coordination;
21 technological uncertainties; plan success; and, funding. A continuing conflict exists
22 between agriculture and environmental interests. It is argued that if the effects of the
23 current plan have a negative impact on sugar yields, then prices will soar. While
24 ensuring that successful Everglades restoration is a high priority, it is balanced against
25 the livelihood of farmers and croppers.

26 27 28 **Chesapeake Bay Program**¹¹

29
30 **The Setting.** The Chesapeake Bay watershed is roughly 64,000 square miles and
31 spans parts of six states (Delaware, Maryland, New York, Pennsylvania, Virginia, and
32 West Virginia) and the District of Columbia. There are about 150 major rivers and
33 streams in the Chesapeake drainage basin, and the basin is home to roughly 16 million
34 people.

35
36 The Bay supports more than 3,600 species of plants, fish and animals, including
37 348 species of finfish, 173 species of shellfish, and over 2,700 plant species. In
38 addition, the region is home to 29 species of waterfowl and is a major resting ground
39 along the Atlantic Migratory Bird Flyway. Every year, one million waterfowl winter in the
40 Bay watershed.

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Agricultural lands make up nearly one-third of the Chesapeake Bay watershed. This trend holds true in most of the Chesapeake's sub-watersheds as well. In the Susquehanna River Basin – the largest of the Chesapeake's sub-watersheds – agriculture is by far the dominant land use, with over 8,000 square miles devoted to agricultural production, much of that in the form of cattle raising. Another agriculturally dominated area, the Eastern Shore of the Chesapeake (Delmarva Peninsula), includes a significant number of poultry farms.

Historically, the Chesapeake has been home to a number of important and successful fisheries, particularly for oysters and blue crabs. Between the 1920s and 1970s, the average annual oyster catch was around 27 million pounds. Since the 1970s, however, the combined effects of over-fishing, oyster disease, and pollution have resulted in smaller and smaller commercial harvests.

The Chesapeake Bay includes two of the five major Atlantic ports in the United States, namely Baltimore, Maryland, and Hampton Roads, Virginia. The Hampton Roads complex, comprising Portsmouth, Norfolk, Hampton, and Newport News, dominates the mouth of the Bay and ranks third in tonnage of foreign waterborne commerce nationally. At the northern end of the Bay, the Port of Baltimore is ranked ninth in the nation and is the leading handler of forest products and the second largest handler of automobiles. In addition, both ports are near the coal-producing regions of Appalachia, making them essential for exporting coal overseas.

The Problem. Recorded ecosystem problems began with the rapidly increasing population and forest clearing in the 1650s. The area was one of the early English settlements active in agriculture and timber production. By the 1750s, 20 to 30 percent of the region's forests were stripped for settlement and siltation from soil erosion resulted in navigation problems. Forest clearing continued through the 19th century. The railroad and ship building industry consumed an estimated 20 million acres of eastern forests. Population growth in the early 20th century increased water pollution and industrial waste into the Bay, furthering the decline in water quality. By the 1920s, crab harvests had decreased by 55 percent. Through the post World War II population boom, fishery populations continued to decline. Water quality continued to deteriorate as a consequence of further population growth, increased agricultural fertilization, the density of farm animals, and atmospheric inputs. Siltation continued to be a major problem in the Bay, along with algal blooms, concentrated toxins and organic compounds, decreased dissolved oxygen, and a general decline of submerged aquatic vegetation. Throughout the Basin, the draining of wetlands increased nutrient loading and the flow of pesticides to the Bay. Nature took its toll in 1972. Tropical Storm Agnes caused

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widespread damage sending torrents of runoff, sediment, and nutrients into the Bay, destroying many underwater grass beds. The Bay was left in the worst condition of its recorded history.

By the 1990s the average density of oysters in the Bay was estimated to be 4 percent of 1884 levels. In 1997, new toxic chemicals were discovered in three tidal tributaries of the Bay, causing fish kills and raising concerns about nutrient impacts on human health and water quality.

Major problems in the ecosystem include:¹²

- Decreased dissolved oxygen and water clarity as a result of nutrient enrichment and algal blooms, sediment runoff, and a reduced filtering and self-cleaning capacity of oyster reefs.
- Loss of submerged aquatic vegetation critical to juvenile fish and shellfish. Of the 200,000 acres of vegetation historically present in the watershed, approximately 64,709 remain.
- Depletion of the Chesapeake's oyster fishery from over-harvesting, disease, pollution, and loss of reef habitat. Today, the annual oyster harvest is less than 1 percent of what it was 50 years ago.
- Reduced blue crab harvests from over-fishing and pollution. The Chesapeake's blue crab fishery is fully exploited, with current harvests well below long-term averages, and decreasing recruitment of juvenile crabs.
- Losses of forest cover throughout the watershed. Some 95 percent of the Chesapeake watershed was once forested, while current levels of forest cover are approximately 60 percent.

The Response. The need to improve conditions of the Bay was first recognized at the beginning of the 20th century. The federal Public Health Service investigated pollution in the Chesapeake Bay and Potomac River, stating that wastes from Chesapeake Bay canneries were harming fisheries. In 1912, the City of Baltimore became the last major city in America to install sewer lines, but was the first to adopt a waste treatment system. The system was installed based on its ability to save valuable oyster beds and was the result of hard lobbying in Maryland's General Assembly by the Chesapeake Bay's powerful oyster interests.

The first interstate conference on the Bay was held in Baltimore in 1933. Participants, including representatives from the federal government (U.S. Bureau of Fisheries), Virginia, Maryland, Delaware, and the District of Columbia, discussed the

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Bay's growing environmental problems and the need for a common management approach. The concept of treating the Chesapeake as a single resource entity was established. Participants also unanimously agreed on the creation of a multi-state, permanent Chesapeake Bay committee in order to help coordinate and promote the preservation effort.

In 1967 the Chesapeake Bay Foundation was formed – a non-profit organization with headquarters in Annapolis, Maryland, and state offices in Maryland, Virginia, and Pennsylvania. The foundation's mission was twofold:

- 1) To defend and restore the Chesapeake Bay by promoting strong and effective laws and regulations, restoring the Bay's essential habitats, and engaging and involving citizens.
- 2) To build a watershed-wide environmental ethic by conducting environmental education in the classroom and the field.

In addition to the non-profit foundation, by the mid-1970s states fronting the Bay had established a variety of commissions to explore ways of restoring various aspects of the Chesapeake Bay environment.

Governance, Powers and Duties and Restoration Activities. There are two main actors on the environmental restoration stage, the Chesapeake Bay Commission and the Chesapeake Executive Council.

Chesapeake Bay Commission. The Chesapeake Bay Legislative Advisory Commission was created by the Legislatures in Maryland and Virginia as a body to study and make recommendations to the two state governments on methods to improve the environmental quality of the Bay. Based on the recommendations of the advisory commission, Maryland and Virginia established the Chesapeake Bay Commission in 1980.

The history of the Chesapeake Bay Legislative Advisory Commission is relevant to understanding the role of the Chesapeake Bay Commission. The findings of the advisory commission's study – that greater interstate cooperation was needed, that the Legislatures of the states needed to be engaged, that the initiative to clean the Bay had to come from the states themselves in order to be successful – had a direct impact on the goals and duties of the Chesapeake Bay Commission. The legislation creating the Commission, specified a number of goals consistent with the advisory commission's recommendations. The goals were to:

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- Assist the legislatures in evaluating and responding to mutual Bay concerns.
- Promote intergovernmental cooperation and coordination for resource planning.
- Promote uniformity of legislation where appropriate.
- Enhance the functions and powers of existing offices and agencies.
- Recommend improvements in the management of Bay resources.

Following years of study and analysis on the part of the states and the federal government, the Chesapeake Bay Agreement of 1983 was signed by Maryland, Pennsylvania, Virginia, the District of Columbia and the U.S. Environmental Protection Agency. This voluntary agreement established an intergovernmental structure that involved the participating states, federal agencies, the Chesapeake Bay Commission and a variety of local interests and also established the Chesapeake Bay Program.

Recognizing the importance of the Pennsylvania portion of the watershed to the Bay cleanup effort, in 1985 the Commission acted to include Pennsylvania as a member state. Since that time, the Commission has led the region as a model of interstate cooperation in ecosystem management. The Commission has promoted policy initiatives in the areas of nutrient reduction, fisheries management, toxics remediation, pollution prevention, habitat restoration and land management.

The Chesapeake Bay Agreement serves as the framework for the multi-jurisdictional Chesapeake Bay Program. As a signatory, the Commission serves as the legislative arm of the Chesapeake Bay Program and is fully involved in all Bay Program policy and implementation decisions.

The statutes which created the Commission contain explicit duties which provide for cooperation on issues of mutual concern to the Bay states. Specifically, the Commission is charged with:

- Identifying concerns requiring inter-jurisdictional coordination and cooperation.
- Collecting, analyzing, and disseminating information pertaining to the region and its resources for the respective legislative bodies.
- Recommending legislative and administrative actions necessary to encourage effective and cooperative management of the Bay.
- Representing the common interests of the member states as they are affected by the activities of the federal government.
- Providing an arbitration forum to serve as an advisory mediator for conflicts among the states.

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- 1 *The Executive Council.* The Chesapeake Executive Council was established by the
2 *Chesapeake Bay Agreement of 1983.* Under the *1987 Chesapeake Bay Agreement*,
3 membership changed from cabinet secretaries to the governors of Maryland,
4 Pennsylvania and Virginia, the administrator of the U.S. Environmental Protection
5 Agency, the mayor of the District of Columbia and the chair of the Chesapeake Bay
6 Commission.
7
8 The Executive Council meets as needed, but at least annually, and establishes the
9 policy direction for the restoration and protection of the Chesapeake Bay. At its annual
10 meeting in 2000, the Executive Council signed and released the *Chesapeake 2000*
11 agreement, which lays out goals and commitments for the next decade. At the 2002
12 annual meeting, the EPA committed to issue the water quality criteria document for the
13 Chesapeake Bay and its tidal tributaries by April 2003. All members of the Council
14 committed to setting nutrient and sediment reduction goals by the same date. These
15 commitments were met.
16
17 The Executive Council exerts leadership to marshal public support and is
18 accountable to the public for progress made under the agreements.
19
20 The involvement of all affected parties shows up in the organizational attributes of
21 the Chesapeake Bay Program. Public, scientific and non-profit organizations all have a
22 role to play in the development of policy regarding the Bay. There are 27 federal
23 agencies and departments, dozens of departments and agencies from the seven states
24 that are a party to the agreement and 11 non-profit, public interest groups and other
25 regional governmental groups. Over 200 people are involved in the committee structure.
26

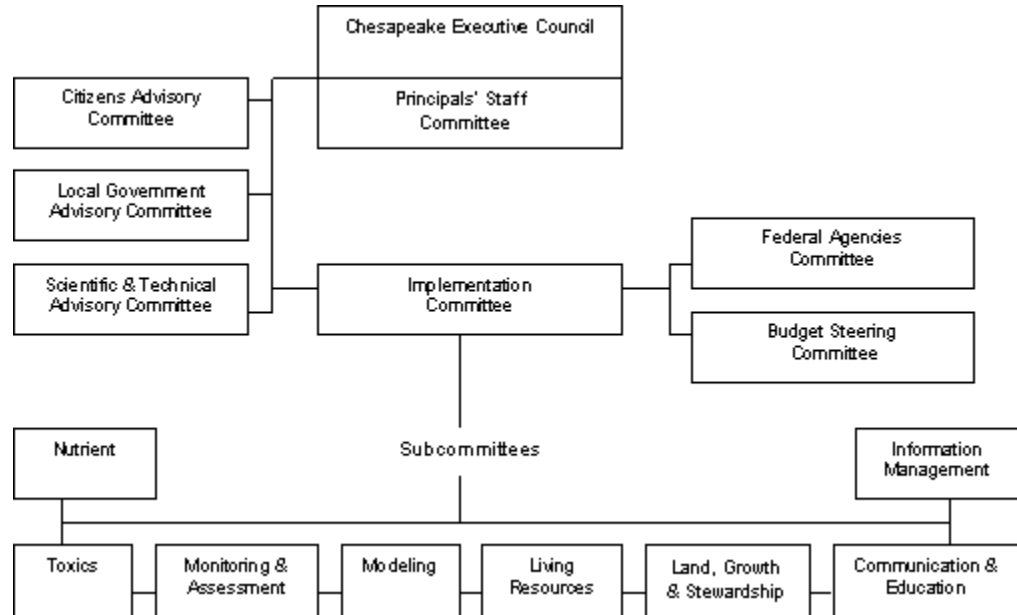
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1

Figure 2. Chesapeake Bay Program Organizational Chart



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23

Finance. The history of funding for the Chesapeake Bay Program has been primarily the presence of the federal government. Over a seven-year period from 1999 through 2005 the average annual funding from the federal government was approximately \$36 million. Over 80 percent of that amount came from the Environmental Protection Agency to deal with Bay pollution problems. About half of the \$36 million was allocated to the states and the District of Columbia through Chesapeake Bay Implementation Grants. The remaining amount was directed to projects that benefit the regional restoration goals.¹³

The 2006 operating budget for the Chesapeake Bay Program was \$5 million. Grants to state and local agencies for implementation of the Bay Program's restoration goals totaled \$8.2 million.

For the most part the Chesapeake Bay Program relies on the budgets of the participating states and the federal government with the federal government contributing most of the resources.

The Chesapeake Bay Executive Council has a staff of five with an annual budget of \$570,000. Each of the three states contribute to the Council's budget.

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1 The 2003 report, *The Cost of a Clean Bay*, estimates the cost of restoration to be
2 \$18.7 billion. The objective of the report was to put a price tag on the Chesapeake Bay
3 2000 agreement.

4
5 From 1995 through the 2004 fiscal year, the restoration effort received
6 approximately \$3.7 billion in direct funding from 11 federal agencies and the states of
7 Maryland, Pennsylvania, and Virginia, and the District of Columbia. These funds were
8 used to support water quality restoration, land use, habitat restoration and community
9 engagement.

10
11 Nearly half of the Chesapeake Bay Program's funding is allocated to states and the
12 District of Columbia through Chesapeake Bay Implementation Grants. The other half is
13 directed to projects that benefit regional restoration goals through committees
14 associated with the program. Annual grant guidance provides direction to states
15 applying for and using Chesapeake Bay Implementation Grant funds. This guidance is
16 based on directives and multi-year priorities with considerable state flexibility. The funds
17 are used for state-specific project implementation and amount to \$8-9 million annually
18 with the states providing a dollar-for-dollar match.

19
20 States also provide additional funding to support Chesapeake Bay restoration
21 programs. For example, Pennsylvania has invested more than \$68 million in restoration
22 and installation of agricultural best management practices in the Bay watershed: \$32
23 million from the Growing Greener Program; \$32 million in state and federal funds from
24 the Bay Program; and, \$5 million from Pennsylvania's Nutrient Management grant
25 program.

26
27 **Strengths and Weaknesses.** The strength of the Chesapeake Bay governance
28 structure is that it involves federal, state, local and non-governmental organizations in
29 the restoration process. As noted in the description above, each organization that plays
30 a role in the life of the Chesapeake Bay is involved in the decision-making process
31 whether scientific or political.

32
33 Restoration projects are focusing greater interest on long-term monitoring and
34 assessment of how well projects are progressing.

35
36 However, in a 2006 report, the General Accounting Office concluded that although
37 the Bay Program had developed over 100 measures to assess progress toward meeting
38 restoration commitments, the program lacked an integrated approach that would allow it
39 to measure the overall progress toward achieving the broad restoration goals in the

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Chesapeake 2000 plan. The State of the Chesapeake Bay reports tended to focus on single issues and not on the progress toward improving the overall health of the Bay.

Section 3. Conclusion—relying on the good will of others may not be sufficient

Four lessons can be learned from the review of the three ecosystem restoration programs.

1. ***There is no substitute for the independent authority to act.*** In each collaborative program reviewed, restoration programs rely on the goodwill of others to implement the goals adopted as part of the collaborative decision-making process. With no independent authority to finance and implement programs, the programs are left to coordinating the work of others toward policy goals. While the federal government plays a major role in each program, the uncertainty of federal commitments can affect progress toward achieving restoration goals. Although the Chesapeake Bay and Columbia River Basin projects involve a multitude of agencies due to the multi-state nature of the ecosystems, the final authority over regulatory and project activities rests with the federal government and individual state and local agencies. In this case, leadership through the bi-state compacts rests with the persuasive ability of the coordinating agency to convince federal, state and local governments to act. The more players, the more difficult it is to gather consensus on a vision for environmental restoration.
2. ***The more independent the players, the more fragmentation and less accountability.*** Two of the organizations reviewed are set up through multi-state agreements and generally as open forums for stakeholders. The single state program reviewed, Florida Everglades, is primarily an intergovernmental coordinating program that seeks to bring government agencies with different statutory authorities together to work toward a unified goal. Decisions on specific projects are usually brought to the body formed by the agreement for their approval or endorsement. When activities to be performed are undertaken by an agency other than the agency created by the agreement, accountability suffers. Monitoring progress is particularly important in this circumstance. In these cases, the program always relies on the financial ability and the goodwill of others.

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- 1 3. ***The agency that raises the revenue should spend the money.*** Most
2 restoration projects are funded by the federal government and the participating
3 state governments, since the organization in charge of the restoration effort
4 usually does not have independent financing capacity. The Chesapeake Bay
5 and Everglades restoration programs do not have the authority to raise revenue
6 by their own actions and therefore, rely on the fiscal condition of other agencies.
7 However, the Columbia River Basin program benefits from revenues generated
8 by the sale of electricity by the Bonneville Power Administration.
- 9 4. ***Without a vision you do not know where you are going.*** Of the three
10 programs analyzed, the Chesapeake Bay project has the most elaborate
11 planning process. The Columbia River project is basically a list of five-year
12 project plans with local agencies competing for a pot of money generated by the
13 Bonneville Power Administration. The Florida Everglades project has a federally
14 recognized restoration plan that includes specific goals that guide specific
15 projects.

16 At the outset of this analysis, a set of questions was asked to see what lessons
17 could be learned from the experience of others. Here are answers to those questions.

18

19 Governance

- 20 ➤ *Does the agency have the ability to implement its decisions?*

21 For the most part all three restoration projects rely on the actions of others. In
22 the case of the Florida Everglades, the U.S. Army Corps of Engineers plays a lead
23 role in the planning, design and funding of restoration projects. Environmental
24 regulatory actions and issues related to growth and development are largely
25 dealt with by the state and local governments. In the Columbia River Basin
26 restoration effort, projects are brought to the Northwest Electric Power and
27 Conservation Planning Council by local and state agencies and academic
28 institutions for funding. The Bonneville Power Administration provides the
29 funding for the program. The Chesapeake Bay Program relies on the activities of
30 member state and federal organizations to get projects implemented.

- 31 ➤ *Are all of the agencies with powers and duties affecting the problem involved
32 in the decision-making process?*

33 The Chesapeake Bay Program has the most extensive intergovernmental
34 program with 75 agencies serving on over 25 committees, working groups and
35 task forces. The Everglades project appears to be the most insular with most of
36 the work from concept, to project planning, to project implementation, centered
37 on the Army Corps of Engineers and their federal agency family. The Columbia

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1 River Basin restoration program involves federal, state, tribal and local
2 governments in the planning and project development process.

3 ➤ *Does the body have the ability to affect the activities of the constituent*
4 *agencies?*

5 In all three cases the body established to develop restoration policy and plans is
6 first a convener, then a coordinator. Each has little authority over the constituent
7 agencies that have program jurisdiction over the geographic area covered by the
8 restoration program. In the final analysis, the restoration programs must rely on
9 the goodwill of others.

10 ➤ *Is the decision-making process open and transparent?*

11 The Chesapeake Bay Program is the most transparent of the three restoration
12 projects. Every aspect of the program includes some form of communication
13 with the public and affected agencies. The Columbia River Basin program has an
14 extensive outreach program. The Florida Everglades program makes
15 information available on its Web site.

16

17 ➤ *Do scientific and public voices have a forum?*

18 Scientific and public voices have a specific governance role given the nature of
19 the advisory committees that are part of the governance structure. Although the
20 Columbia River Basin program includes science panels and a public information
21 program, it does not appear to be as developed as the Chesapeake Bay
22 Program.

23 ➤ *Are there impediments to action?*

24 The primary impediments to action involve the willingness of local and state
25 agencies to subordinate their policy-making authority to the larger regional
26 interest. This is less a case in the Chesapeake due to the well-developed
27 governance structure. Governmental fragmentation remains a problem in all
28 three restoration projects.

29 Finance

30 ➤ *Is there a reliable system for financing restoration programs?*

31 The only program with a reliable funding mechanism is the Northwest Electric
32 Power and Conservation Planning Council. A surcharge on the Bonneville
33 Power Administration's wholesale electricity rate structure makes it possible for a
34 continuing income stream for restoration projects. In the case of the Everglades
35 and Chesapeake Bay programs, each relies on the budgets of federal and state
36 governments.

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➤ Are the financial obligations shared among the affected agencies?

In the case of the Chesapeake Bay Program and the Florida Everglades, the federal and state governments share the funding obligation for restoration activities. In the case of the Columbia River Basin, the wholesale rate payers that use electricity from the Bonneville Power Administration are the primary source of revenue for the restoration activity, although federal agencies have funded projects that further the agencies goals as well as the goals of the Northwest Council's ecosystem restoration.

Section 4. Sources

Gerlak, Andrea K. and Heikkila, Tanya, Comparing Collaborative Mechanisms in Large Scale Ecosystem Governance, December 2006.

Michael Burke, Associate Director, Chesapeake Bay Program Office, U.S. Environmental Protection Agency. Testimony to the Little Hoover Commission. October 2005. <http://www.lhc.ca.gov/lhcdir/Oct05.html>

Interstate Compacts: An Overview of the Structure and Governance of Environment and Natural Resource Compacts. (GAO-07-519)

Ecosystem Planning: Northwest Forest and Interior Columbia River Basin Plans Demonstrate Improvements in Land-Use Planning. (GAO/RCED-99-64)

Chesapeake Bay Program: Improved Strategies are Needed to Better Assess, Report and Manage Restoration Progress. (GAO-06-96)

Columbia River Basin: A Multilayered Collection of Directives and Plans Guides Federal Fish and Wildlife Activities. (GAO-04-602)

GAO Testimony – Comprehensive Everglades Restoration Plan: Additional Water Quality Projects May be Needed and Could Increase costs. (GAO/T-RCED-00-297)

South Florida Ecosystem Restoration: Improved Science Coordination Needed to Increase the Likelihood of Success. (GAO-03-518T)

Web sites referenced in this document:

The North East Midwest Institute, www.nemw.org.

Northwest Power and Conservation Council, www.nwcouncil.org.

Bonneville Power Administration, www.bpa.gov.

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1 South Florida Ecosystem Restoration Task Force, www.sfrestore.org.

2 United States General Accounting Office, www.gao.gov.

3 Chesapeake Bay Program, www.chesapeakebay.net.

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5 *Section 5. Notes*

¹ See the Web sites of the Northeast Midwest Institute www.nemw.org and the Northwest Power and Conservation Council, www.nwcouncil.org.

² Northeast Midwest Institute, www.nemw.org.

³ Northwest Power and Conservation Council, www.nwcouncil.org.

⁴ Northwest Power and Conservation Council, www.nwcouncil.org.

⁵ Northwest Power and Conservation Council Fiscal Year 2007 Budget, Council Document 2005-10 www.nwcouncil.org.

⁶ Northwest Power and Conservation Council Web site www.nwcouncil.org/library/2007/2007-1.pdf.

⁷ Northeast Midwest Institute, www.nemw.org; South Florida Ecosystem Restoration Task Force www.sfrestore.org.

⁸ Northeast Midwest Institute, www.nemw.org.

⁹ Northeast Midwest Institute, www.nemw.org/everglades.html.

¹⁰ United States General Accounting Office, GAO-03-518T; www.gao.gov/cgi-bin/getrpt?GAO-03-518T.

¹¹ www.chesapeakebay.net.

¹² Northeast Midwest Institute, www.nemw.org.

¹³ www.nemw.org/chesapeake.html.